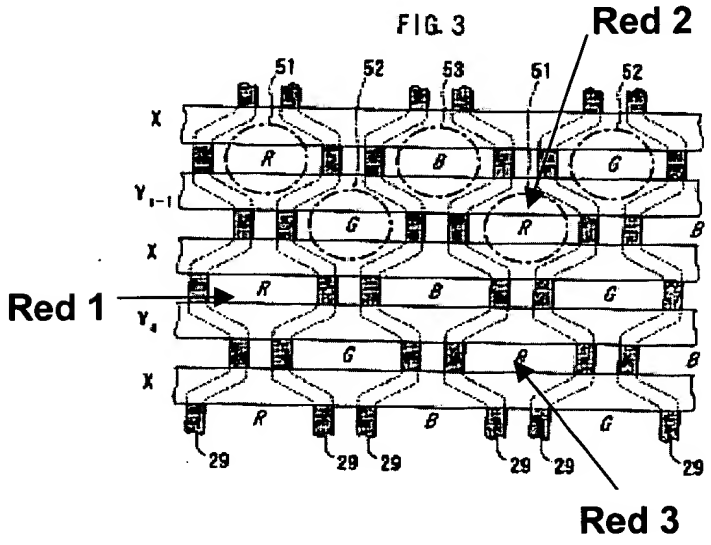
REMARKS

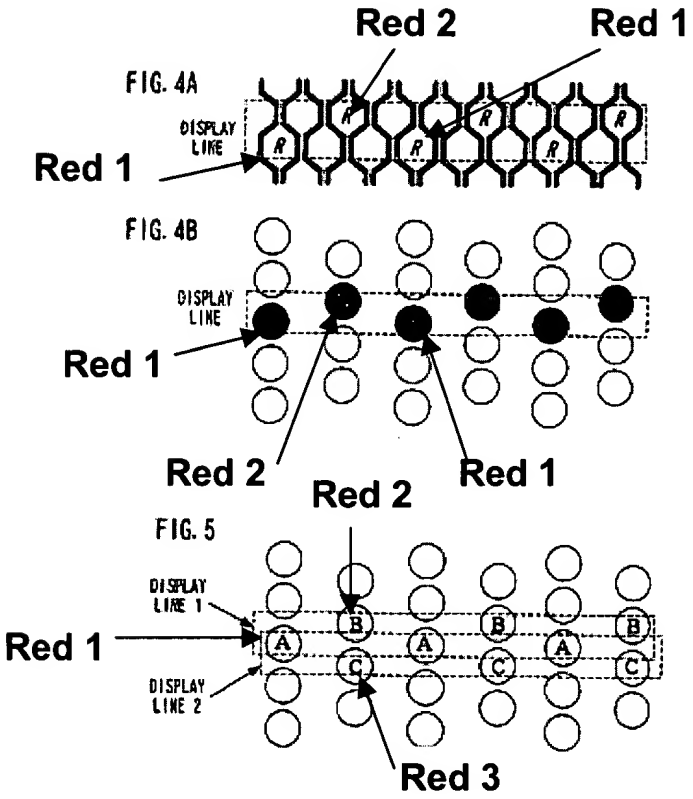
REJECTION UNDER 35 U.S.C. §103

In the Office Action, at pages 2-4, numbered paragraph 2, the Examiner repeats his rejections of claims 1-13, which were rejected under 35 U.S.C. §103(a) as being unpatentable over Betsui et al. (USPN 5,825,128; hereafter referenced "the '128 patent") in view of Shigeta et al.(USPN 5,659,226; hereafter referenced "the '226 patent") in the Office Action mailed on August 22, 2003.

The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

Claims 1-3 have been amended for clarity. It is believed that there may have been some confusion in the Examiner's understanding of the operation of the method and the apparatus of the present invention. At least two differences exist between the present invention and the '128 patent and the '226 patent. As recited in the method (see claim 1 and FIGs. 3-5 below) of the present invention performing an interlaced display is obtained by **"changing a combination of cells of a display line that is perpendicular to the column direction in every field between the neighboring cell columns of the same light emission color, wherein a display line pitch is smaller than a cell arrangement pitch in the column direction"** (emphasis added).





FIGs. 3- 5 of the present invention are reproduced above for the convenience of the Examiner with an example color (Red) utilized to aid understanding of the wording of the independent claims. Note that, in the present invention, for example, display line 1 having Red 1 and Red 2, etc., are illuminated, and in display line 2, Red 1 and Red 3, etc., are illuminated. That is, the combination of **cells** selected to be **illuminated in a display line are** in **a same light emission color**, and (not illustrated) a display line pitch is smaller than a cell arrangement pitch in the column direction.

In contrast, although the '128 patent teaches utilizing undulating walls, said patent teaches a different scheme of illumination of display lines (col. 5, lines 38-41): "Thus, in PDP 1, a single pixel EG is composed of three directly adjacent sub-pixels R, G, & B. That is, the three colors are arranged of a triangular configuration, i.e., in a delta form." Further, the '128 patent states, col. 6, lines 36-39: "Thus, the triangular arrangement is more advantageous in accomplishing a high resolution as well as high brightness of the display than the prior art in-line arrangement." Hence, it is respectfully submitted that the '128 patent does not teach or suggest the illumination of display lines of a same light emission color, as is described in the present invention.

It is respectfully submitted that the '226 patent actually teaches away from the method of the present invention by teaching the conventional "three-electrode structure," which has red, green and blue discharge spaces combined to form a unit light emitting region, reciting (col. 4, line 62 through col. 5, line 6: "Discharge spaces EU(R), EU(G), and EU(B) which can respectively perform a color display are formed by the discharge spaces of three colors having different light emission colors which are sequentially arranged in the horizontal direction. **One pixel cell Pui.j of the PDP in which those three discharge spaces EU(R), EU(G) and EU(B) serve as one unit is formed as a unit light emitting region.** That is, **one pixel cell comprises the three discharge spaces** EU(R), EU(G), and EU(B). In each discharge space, the discharge is started, maintained, and erased by three electrodes of the row electrodes comprising two row electrodes Xi and Yi and the column electrode which intersects those row electrodes" (emphasis added). Even in FIG. 10 of the '226 patent, when the three discharge spaces are staggered, the '226 patent teaches (col. 8, lines 33-36): "...one pixel cell PU of the PDP is formed by setting three unit light emitting regions EU®, EU(G), and EU(B) of different light emission colors which are neighboring to one unit as shown in the diagram." Thus, the '226 patent does not teach or suggest changing a combination of cells of a same light emission color of a display line, as is taught by the present invention.

It is respectfully submitted that since neither the '128 patent nor the '226 patent teach or suggest the method and/or device of the present invention, the combination of the '128 and the '226 patent also do not teach or suggest the method and/or device of the present invention.

It is respectfully submitted that, in In re Dembiczak, the court noted that:

> Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field.

In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). One "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1780, 1783 (Fed. Cir. 1988).

The case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

"Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." Id. "When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references." In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998) (citing In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)). "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). Although the suggestion to combine references may flow from the nature of the problem, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), "[d]efining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness," Monarch Knitting Mach. Corp. v. Sulzer Morat Gmbh, 139 F.3d 877, 880, 45 USPQ2d 1977, 1981 (Fed. Cir. 1998). Therefore, "[w]hen determining the patentability of a claimed invention which combines two known elements, 'the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" In re Beattie, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992) (quoting Lindemann, 730 F.2d at 1462, 221 USPQ at 488).

The Examiner does not discuss any specific evidence of motivation to combine, but only makes conclusory statements.

"Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. The Examiner provides no support for his broad conclusory statement: "It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Shigeta interfacing by changing the combination of the cells of the display, to be incorporated to Betsui's device so as (to be) motivated by Shigeta, to increase in fineness of the display (abstract), and to make it easier to precisely manufacturing the row electrodes in excess of a patterning precision and width of the electrodes (col. 1, lines 42-45)." In addition, the '226 patent (Shigeta) does not teach illumination of the same combination of cells that is taught by the present invention (see above).

The Examiner appears to make implicit findings, but can point to nothing that suggests the combination of the '128 patent and the '226 patent to then suggest the present invention. However, while these references teach a plasma display panel, comprising: a matrix of unit display elements arranged on a main surface of a substrate in rows in a first direction and lines in a second direction, generally perpendicular to the first direction; a plurality of separator walls formed on the main surface of the substrate and extending along the first direction of said rows, adjacent separator walls being spaced apart in the second direction by corresponding channels defining respective discharge spaces, said separator walls having a zig-zag configuration such that each channel, between adjacent separator walls, varies periodically in width in the second direction between first and second widths respectively smaller than and at least as large as a width required for supporting discharges, the discharge spaces being of the second width; fluorescent materials disposed in said channels, said fluorescent material in a given channel being of a common color; and a plurality of display electrodes, extending along said second direction in parallel relationship and spaced in the first direction, said display electrodes being arranged so that an electrical discharge is generated in a selected discharge space (see claim 1 of the '128 patent (Betsui et al.)), and a plasma display apparatus comprising: a plurality of column electrodes which extend in parallel to each other in a vertical direction; light emission layers which are made of fluorescent material films of R (red), G (green), and B (blue) and which extend in parallel to each other along said column electrodes and in which colors of emitted light of adjacent layers are different; and a plurality of row electrodes which extend in a horizontal direction perpendicular to said column electrodes and which form unit light emitting regions at positions near their intersecting portions with said column electrodes, each of said row electrodes defining a scanning line, wherein among said unit light emitting regions, two regions which are neighboring in said horizontal direction are arranged so as to deviate from each other in said vertical direction (see claim 1 of the '226 patent (Shigeta)), neither reference suggests combining, nor provides any motivation to so combine, the element of the Shigeta device (the '226 patent), i.e., interlacing by changing the combination of the cells of the display with the Betsui method (the '128 patent), which provides a plasma display panel with undulating separator walls to provide the present invention. Further, if the '128 patent and the '226 patents are combined, the combination does not teach or suggest the present invention (see above).

It is respectfully submitted that Betsui (the '128 patent) actually teaches away from combining the Shigeta invention (the '226 patent) with the Betsui method (the '128 patent) to achieve the present invention. While the Betsui reference describes using a plasma display panel with undulating separator walls, it utilizes the undulating separator walls to provide a configuration that decreases the area of the non-luminant portion of the display screen by facilitating spatially contiguous cells. In contrast, the '128 patent discloses a plasma display panel that has a matrix of plural first straight electrodes and plural straight second electrodes, respectively crossing each other, and a unit color element located at a crossing point of the first and second electrodes. As recited in claim 1 of the '226 patent, "A plasma display apparatus comprising: a plurality of column electrodes which extend in parallel to each other in a vertical direction; light emission layers which are made of fluorescent material films of R (red), G (green), and B (blue) and which extend in parallel to each other along said column electrodes an in which colors of emitted light of adjacent layers are different; and a plurality of row electrodes which extend in a horizontal direction perpendicular to said column electrodes and which form unit light emitting regions at positions near their intersecting portions with said column electrodes, each of said row electrodes defining a scanning line, wherein among said unit light emitting regions, two regions which are neighboring in said horizontal direction are arrange(d) so as to deviate from each other in said vertical direction."

Hence, there is clear evidence of teaching away from the Betsui method (the '128 patent) by the Shigeta reference (the '226 patent), and no evidence that there was any suggestion in the prior art to combine these two references, and yet the Examiner submits that the present invention is obvious in light of the prior art.

It is respectfully submitted that the absence of a convincing discussion of the specific sources of the motivation to combine the prior art references, particularly in light of the strength of prior art teaching away from the use of the Shigeta device (the '226 patent), is a critical omission in the Examiner's obviousness analysis, which mainly begs the question with respect to motivation for combining prior art references to read on the claimed invention. This citation of the two references and submission that it would have been obvious to combine same wholly fails to demonstrate how the prior art teaches or suggests the combination claimed in the present invention.

Because Applicant does not discern any suggestion, teaching, or motivation to combine the prior art references cited against the claimed invention, and even if combined, the cited references fail to teach or suggest the present invention, it is respectfully submitted to that the combination is insufficient to suggest that the present invention is obvious. The implicit generalized finding by the Examiner that, when one of ordinary skill in the art was faced with the problem of obtaining a high definition display and the '128 patent, the combination claimed by the present invention would have been obvious is submitted to be insufficient. The court has previously held that "[t]he suggestion to combine may be found in explicit or implicit teachings within the references themselves, from the ordinary knowledge of those skilled in the art, or from the nature of the problem to be solved." WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed. Cir. 1999). However, there still must be evidence that "a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." In re Rouffet, 149 F.3d at 1357, 47 USPQ2d at 1456; see also In re Werner Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("[A] rejection cannot be predicated on the mere identification . . . of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed."). Here, there was no such evidence presented. The only evidence on this issue presumes the very problem at hand-- that "if someone of ordinary skill in the art had been given the Betsui et al. reference (the '128 patent) on April 7, 2000 (the date of the priority application for the present invention) and [if] they were asked to provide for displaying an image on a display device such that a higher definition display was obtained, they would have come up with the present invention. The evidence available, however, indicates that if one of ordinary skill in the art had been given the '128 patent, they would not have been inclined to use the '226 patent because the Shigeta reference teaches using a conventional three-electrode structure. Hence, the Applicant respectfully submits that the Examiner's contention that a skilled artisan would combine these references is clearly erroneous.

NEW CLAIMS

New claim 14 recites that the features of the present invention include a display apparatus comprising: a display device having a display surface including plural cell columns, each of which is a set of cells having a same light emission color, the display device having a cell arrangement structure in which cell positions in a column direction are shifted from each other between neighboring cell columns; and a driving circuit for performing an interlaced display by changing a combination of cells of a display line having a display line pitch that is smaller than a cell arrangement pitch in the column direction, wherein the display line is perpendicular to the column direction in every field between the neighboring cell columns of the same light emission color in every field, and wherein a number of display lines utilized is twice a number of scanning electrodes utilized.

Nothing in the prior art teaches or suggests such. It is submitted that new claim 14 distinguishes over the prior art.

New claim 15 recites that the features of the present invention include A display apparatus comprising: a display device having a display surface including plural cell columns, each of which is a set of cells having a same light emission color, the display device having a cell arrangement structure in which the cells are arranged at a constant cell arrangement pitch in each cell column, and cell positions in a column direction are shifted from each other between neighboring cell columns by half of the constant cell arrangement pitch; and a driving circuit for performing an interlaced display by changing a combination of cells of a display line having a display line pitch that is smaller than the cell arrangement pitch in the column direction, wherein the display line is perpendicular to the column direction in every field between the neighboring cell columns of the same light emission color in every field, and wherein a number of display lines utilized is twice a number of scanning electrodes utilized.

Nothing in the prior art teaches or suggests such. It is submitted that new claim 15 distinguishes over the prior art.

CONCLUSION

In accordance with the foregoing, claims 1-3 have been amended, and claims 14 and 15 have been added. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-15 are pending and under consideration. Reconsideration is respectfully requested.

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited. At a minimum, this Amendment should be entered at least for purposes of Appeal as it either clarifies and/or narrows the issues for consideration by the Board.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited and possibly concluded by the Examiner contacting the undersigned attorney for a telephone interview to discuss any such remaining issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By: Darleen J. Stockley
Darleen J. Stockley
Registration No. 34, 257

1201 New York Avenue, N.W.
Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501